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### Third Quarter 2014: Hotel Prices Decline on a Year over Year Basis: Expect this Trend to Continue

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## Third Quarter 2014: Hotel Prices Decline on a Year over Year Basis: Expect this Trend to Continue

### Abstract

The borrowing cost of debt financing continues to remain stable while equity financing has become relatively cheaper. We expect prices for hotel properties to fall slightly in the next quarter. This is not necessarily bad news since it will give operating performance as measured by EVA a chance to continue to increase vis-à-vis an increase in the cap rate, assuming that total borrowing cost remains stable or it becomes cheaper to borrow debt or equity money. This is report number 12 of the index series.

### Keywords

Cornell, EVA analysis, RevPAR, hotel indices, hotel valuation model, HOTVAL

### Disciplines

Real Estate

### Comments

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#### Supplemental File:

**Hotel Valuation Model (HOTVAL)** We provide this user friendly hotel valuation model in an excel spreadsheet entitled HOTVAL Toolkit as a complement to this report which is available for download from <http://scholarship.sha.cornell.edu/creftools/1/>

Cornell Hotel Indices: Third Quarter 2014:

# Hotel Prices Decline on a Year over Year Basis: Expect this Trend to Continue

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## EXECUTIVE SUMMARY

**T**he borrowing cost of debt financing continues to remain stable while equity financing has become relatively cheaper. We expect prices for hotel properties to fall slightly in the next quarter. This is not necessarily bad news since it will give operating performance as measured by EVA a chance to continue to increase vis-à-vis an increase in the cap rate, assuming that total borrowing cost remains stable or it becomes cheaper to borrow debt or equity money. This is report number 12 of the index series.

Cornell Hotel Indices: Third Quarter 2014:

# Hotel Prices Decline on a Year-over-Year Basis: Expect this Trend to Continue

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## Analysis of Indices through Q3, 2014

### Hotel Investment Based on Operating Performance Has Improved

Our Economic Value Added (EVA) indicator shown in Exhibit 1 has improved from -3.8 percent in 2014Q1 to -1.6 percent in 2014Q2. Looking under the hood, not only have hotel cap rates improved from 6.1 percent (2014Q1) to 6.3 percent (2014Q2), but also the weighted average borrowing cost (the average debt financing and equity financing used on a hotel deal) has declined from 9.9 percent (2014Q1) to 7.9 percent (2014Q2). We hope that this trend will continue as it suggests that hotel investors will also start to make money from hotel operations in addition to the sale of the property.

### Hotel Transaction Volume Has Increased but Median Price Has Not Necessarily Followed

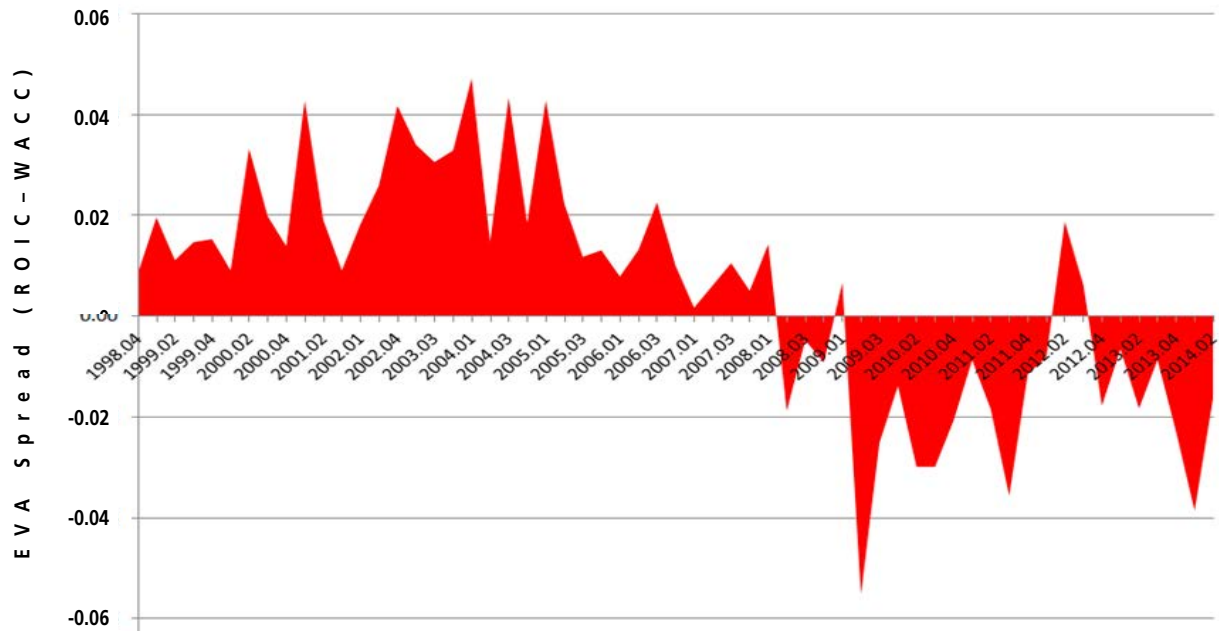
The total volume of hotel transactions for both large hotels and small hotels increased in the third quarter. Year over year, the hotel transaction volume increased 41.8 per-

## About the Cornell Hotel Indices

In our inaugural issue of the Cornell Hotel Index series, we introduced three new quarterly metrics to monitor real estate activity in the hotel market. These are a large hotel index (hotel transactions of \$10 million or more), a small hotel index (hotels under \$10 million), and a repeat sales index (RSI) that tracks actual hotel transactions. These indices are constructed using the CoStar and Real Capital Analytics (RCA) commercial real estate databases. For the repeat-sale index, we compare the sales and resales of the same hotel over time. All three measures provide a more accurate representation of the current hotel real estate market conditions than does reporting average transaction prices, because the average-price index doesn't account for differences in the quality of the hotels, which also is averaged. A more detailed description of these indices is found in the first edition of this series, "Cornell Real Estate Market Indices," which is available at no charge from the Cornell Center for Real Estate and Finance (CREF). In this fourth edition, we present updates and revisions to our three hotel indices along with commentary and supporting evidence from the real estate market.

## EXHIBIT 1

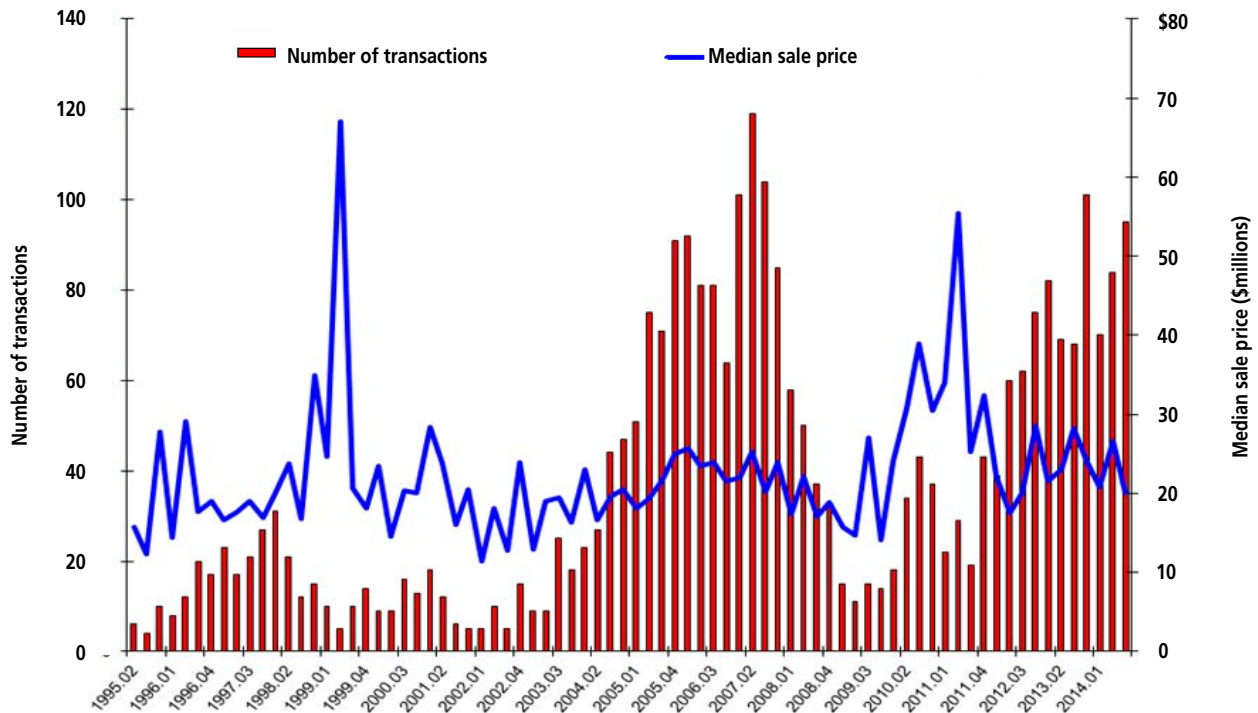
### Economic value added (EVA) for hotels



Sources: ACLI, Cornell Center for Real Estate and Finance, NAREIT, Federal Reserve

## EXHIBIT 2

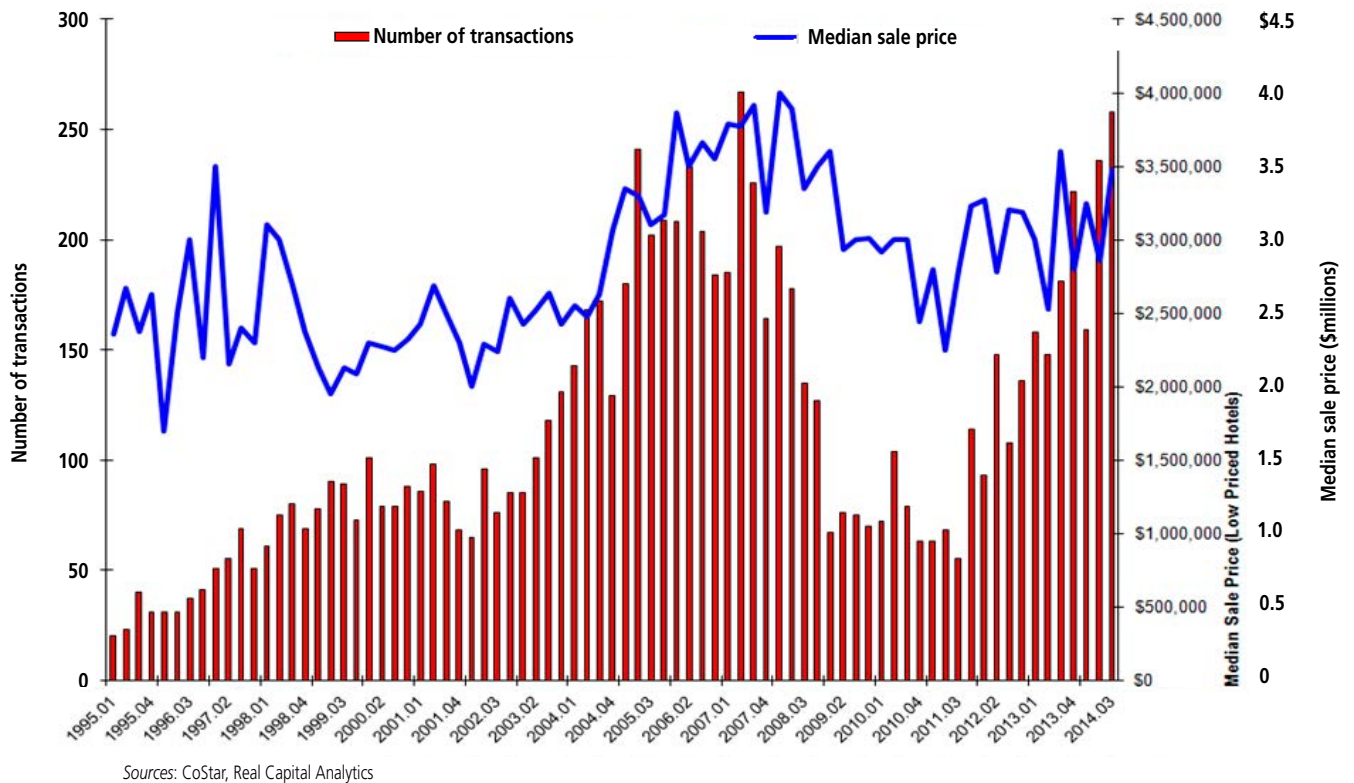
### Median sale price and number of sales for large hotels (sale prices of \$10 million or more)



Sources: CoStar, Real Capital Analytics

### EXHIBIT 3

#### Median sale price and number of sales for small hotels (sale prices of less than \$10 million)



cent (2013Q3 to 2014Q3). This increase is slightly lower than the 48.4-percent increase (2013Q2 to 2014Q2) in the second quarter. A similar trend exists on a quarter-over-quarter basis with the quarter-two total hotel volume rising 10.3 percent (2014Q2 to 2014Q3) in contrast to 40.6 percent in the first quarter, that is, from 2014Q1 to 2014Q2. With respect to large versus small hotels, the volume of large hotel transactions included in our hedonic index rose 13.1 percent while small hotel transaction volume rose by 9.3 percent from the previous quarter.<sup>1</sup> The transaction volume for large hotels increased 39.7 percent on a year-over-year basis; small hotel transaction volume experienced an even greater gain with a year-over-year growth rate of 42.5 percent.

In contrast to hotel transaction volume, the median price for large hotels fell 29.1 percent while the median price for small hotels declined 3.5 percent on a year-over-year basis. A slightly different situation existed on a quarter-over-quarter basis with large hotels experiencing a 24.9-percent loss, while

smaller hotels experienced a 21.5 percent gain. Exhibit 2 and Exhibit 3 show a positive trend in the number of transactions for large hotels and small hotels. However, these exhibits also show that the median price has moved sideways for the last several quarters for large hotels, although it has continued to increase in general for smaller hotels.

The bottom line is that hotel transaction volume is rising at a decreasing rate. The median price for large hotels has been moving laterally for the last several quarters in contrast to smaller hotels that have experienced a positive momentum in median price.

#### Déjà Vu All Over Again: History Continues to Repeat

Hotel prices continue to behave in a similar manner relative to the 2003Q1 to 2010Q2 cycle, based on repeat sales. Exhibit 4 provides the price index for the repeat hotel sales used to construct our RSI cycle analysis in Exhibit 5 together with the hedonic price indices for small and large hotels. Exhibit 5 continues to confirm our prior numbers based on cycle analysis.

<sup>1</sup> Note that this should not be construed as being the total market activity.

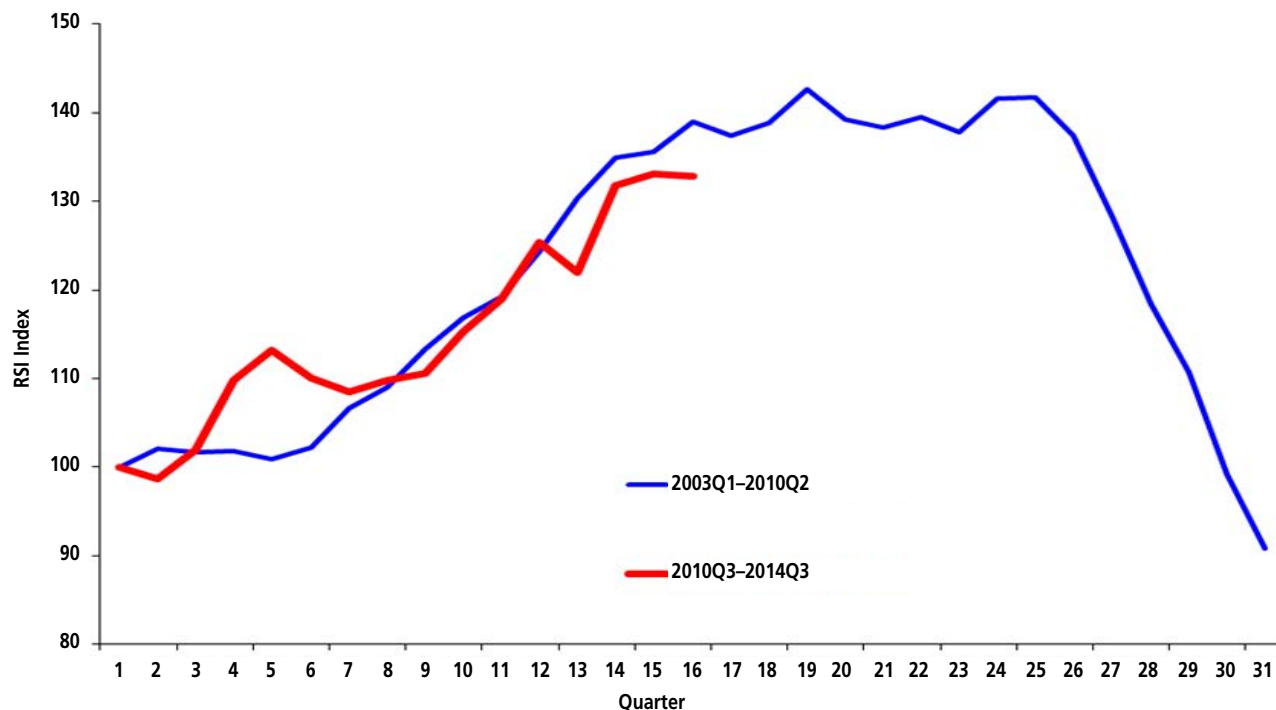


**EXHIBIT 4**
**Hotel indices through 2014, quarter 3**

YrQtr	Index Value				YrQtr	Index Value			
	Hedonic Low Priced Hotels (<\$10M)	Hedonic High Priced Hotels (>=\$10M)	RSI Repeat Sales Index	RSI Index Value Repeat Sales		Hedonic Low Priced Hotels (<\$10M)	Hedonic High Priced Hotels (>=\$10M)	RSI Repeat Sales Index	RSI Index Value Repeat Sales
1995.02	100.784	65.569	68.742		2005.01	127.978	120.727	110.211	128.167
1995.03	102.373	59.293	88.744		2005.02	135.817	127.297	113.636	133.254
1995.04	103.519	56.798	85.633		2005.03	139.106	131.044	115.930	144.973
1996.01	99.460	86.886	88.176		2005.04	140.863	139.231	120.894	153.572
1996.02	97.203	96.188	89.748		2006.01	144.099	146.358	126.715	158.110
1996.03	101.886	103.665	87.141		2006.02	145.511	151.858	131.189	163.180
1996.04	97.011	111.744	85.199		2006.03	150.112	156.766	131.759	158.078
1997.01	106.794	108.011	100.010		2006.04	152.900	159.976	135.060	164.338
1997.02	107.022	109.232	101.507		2007.01	152.014	159.320	133.586	169.869
1997.03	102.728	112.193	100.947		2007.02	154.643	164.213	134.928	170.239
1997.04	105.987	116.189	114.855		2007.03	156.374	159.911	138.730	175.338
1998.01	104.193	120.407	106.334		2007.04	154.306	156.594	135.353	169.570
1998.02	112.509	131.005	110.173		2008.01	157.427	151.134	134.513	167.775
1998.03	114.743	125.837	111.789		2008.02	157.954	150.678	135.570	168.147
1998.04	115.803	140.303	98.671		2008.03	154.104	148.947	133.941	168.155
1999.01	114.418	135.584	94.861		2008.04	154.702	145.964	137.611	170.406
1999.02	106.730	117.990	92.742		2009.01	150.594	142.938	137.830	166.794
1999.03	104.451	129.998	90.650		2009.02	140.896	124.214	133.631	163.279
1999.04	102.808	112.705	92.343		2009.03	137.148	122.250	124.587	155.093
2000.01	100.543	111.851	95.120		2009.04	133.489	104.089	115.155	144.090
2000.02	101.493	111.006	98.543	100.655	2010.01	127.799	112.355	107.575	137.112
2000.03	100.169	108.878	96.666	99.494	2010.02	127.514	128.548	96.402	127.469
2000.04	103.075	112.745	95.793	98.685	2010.03	126.680	149.385	88.268	118.717
2001.01	105.901	132.076	94.883	103.847	2010.04	123.174	181.157	85.950	114.752
2001.02	110.032	145.885	96.257	107.170	2011.01	124.761	183.222	84.802	107.642
2001.03	112.320	133.423	98.391	108.273	2011.02	121.186	200.956	87.624	110.146
2001.04	110.075	134.026	99.550	113.900	2011.03	117.721	185.272	94.334	113.676
2002.01	107.155	116.803	98.026	111.503	2011.04	122.939	184.273	97.312	114.104
2002.02	103.147	102.139	94.424	105.088	2012.01	123.032	185.411	94.622	114.367
2002.03	103.592	99.931	95.646	105.528	2012.02	127.276	164.955	93.245	114.883
2002.04	106.594	105.220	94.279	103.791	2012.03	133.929	163.571	94.423	116.699
2003.01	109.090	106.173	97.206	104.902	2012.04	134.760	161.185	95.064	124.792
2003.02	112.903	123.187	99.202	113.771	2013.01	135.777	157.098	99.112	132.746
2003.03	115.920	131.120	98.811	115.324	2013.02	134.507	162.988	102.274	146.328
2003.04	115.261	133.329	98.998	116.592	2013.03	136.444	173.152	107.801	152.639
2004.01	116.214	134.377	98.057	116.960	2013.04	135.130	171.994	104.860	146.695
2004.02	116.044	117.888	99.364	116.153	2014.01	136.248	173.500	113.328	151.958
2004.03	115.872	121.928	103.657	119.286	2014.02	137.199	175.967	114.417	138.045
2004.04	120.461	114.773	105.947	122.172	2014.03	136.604	173.894	114.237	136.191

## EXHIBIT 5

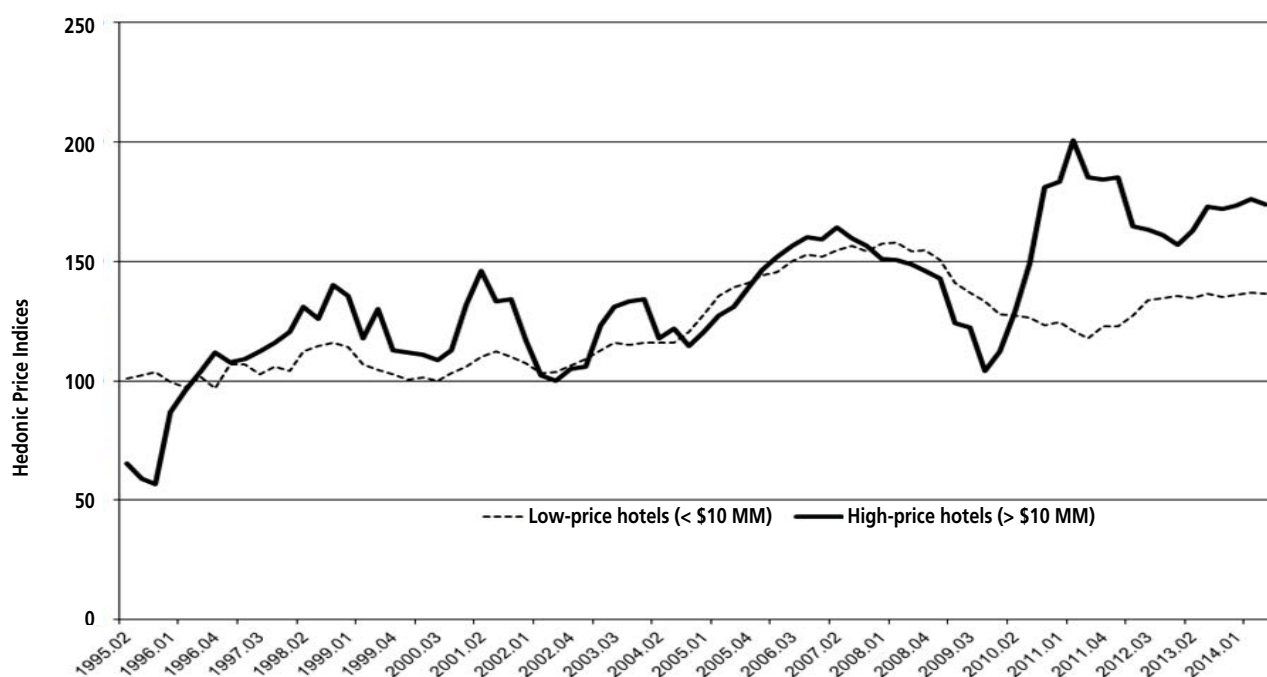
### Comparison of hotel real estate cycles using repeat sales



Sources: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics

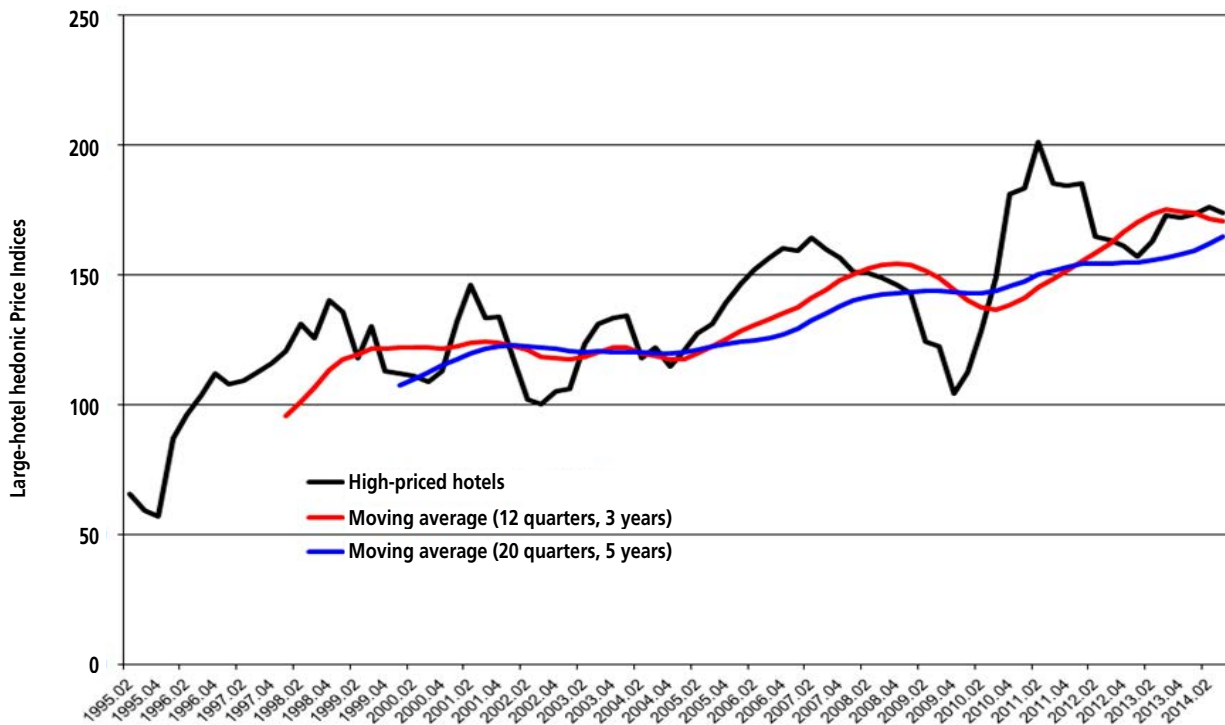
## EXHIBIT 6

### Hedonic hotel indices for large and small hotel transactions

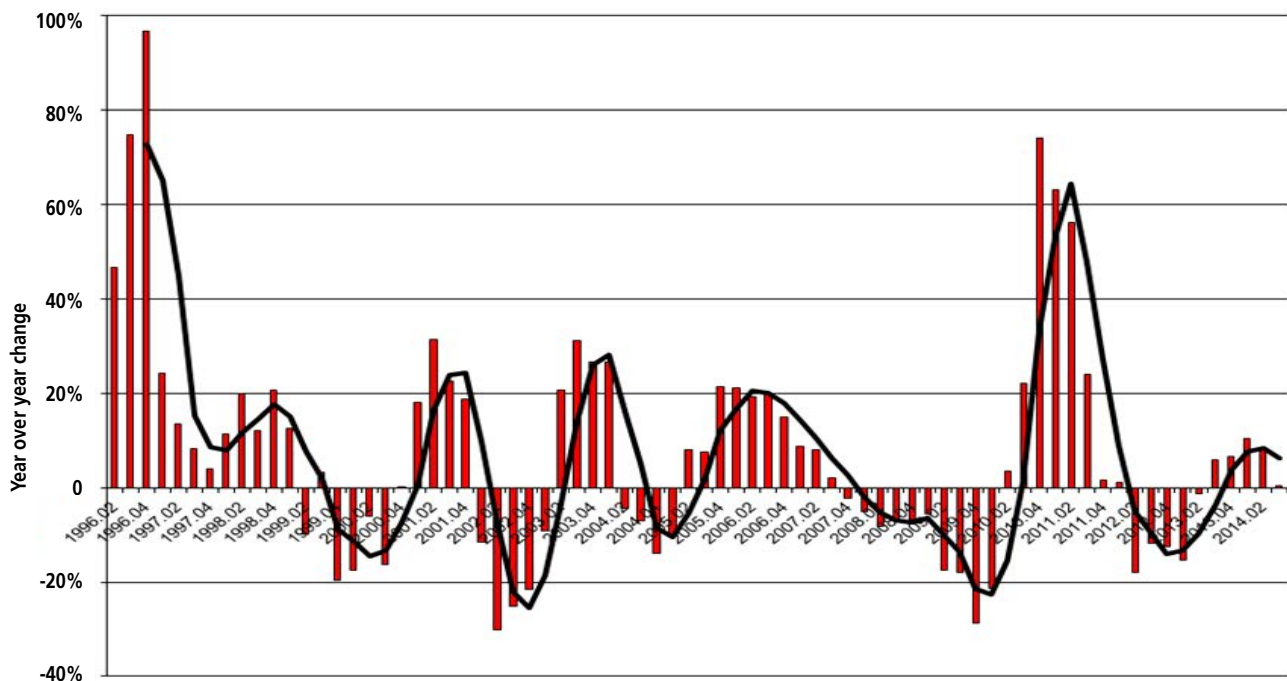


Sources: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics

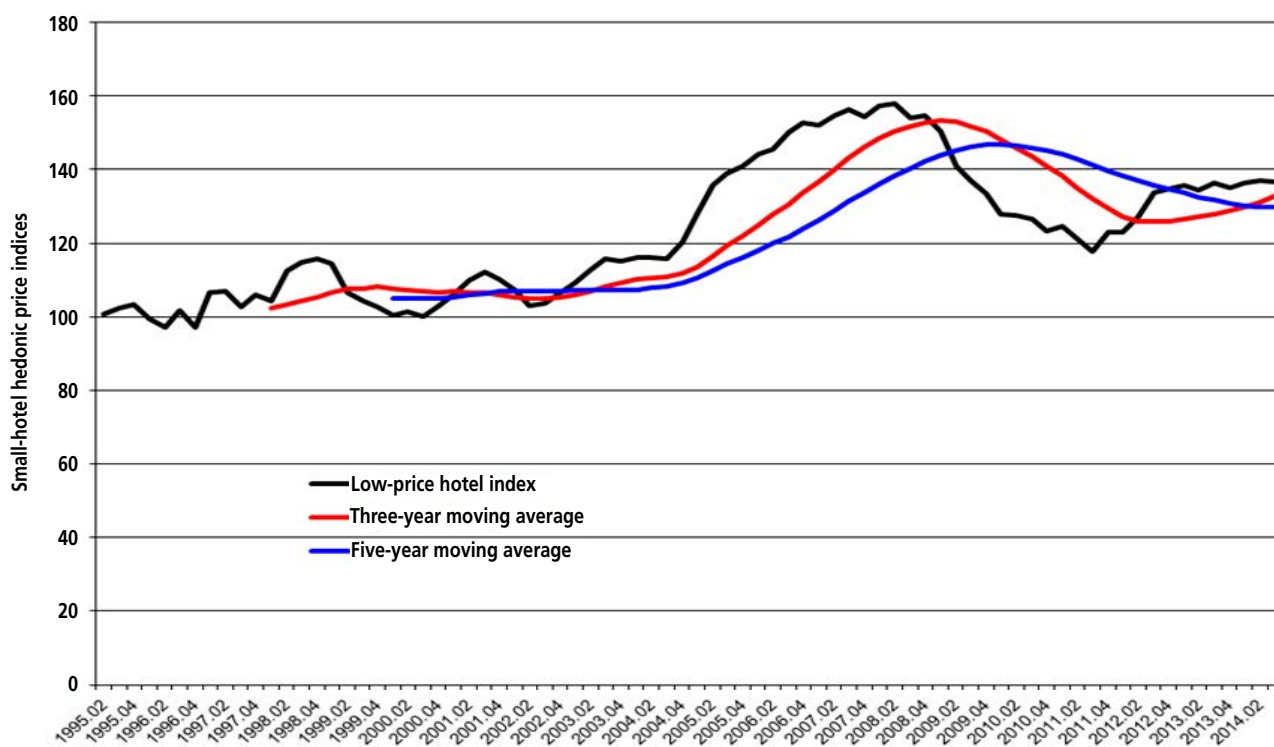


**EXHIBIT 7****Large hotel index, with three-year and five-year moving averages**

Sources: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics

**EXHIBIT 8****Year-over-year change in large-hotel index, with moving-average trendline**

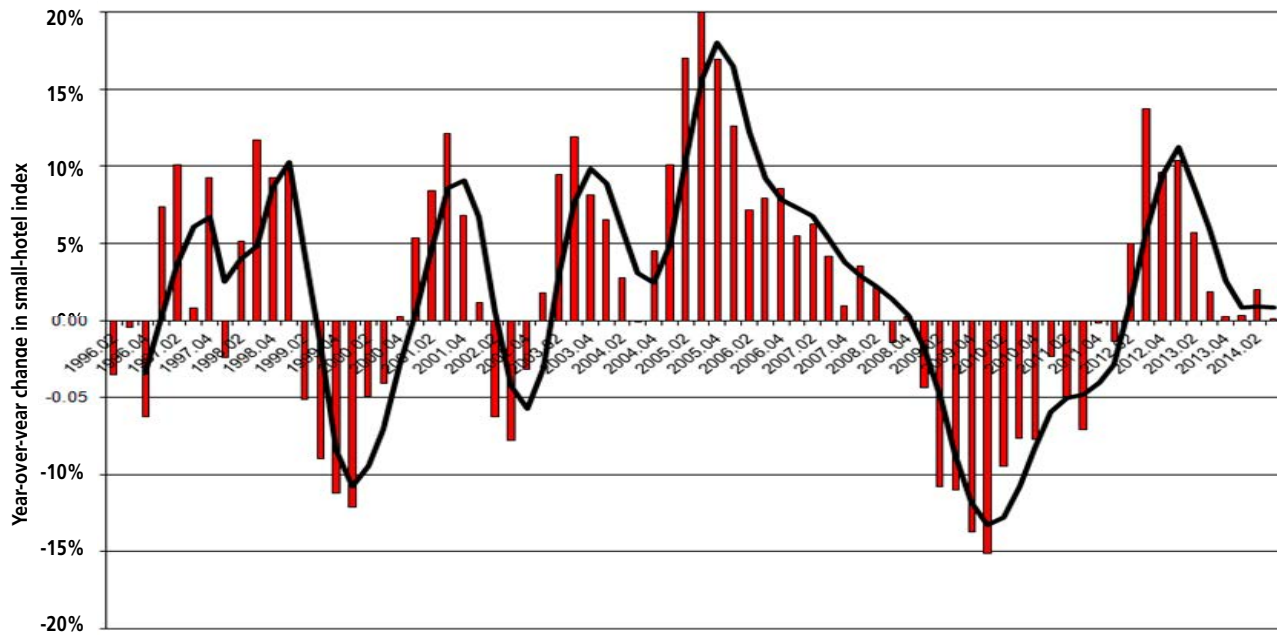
Sources: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics

**EXHIBIT 9****Small hotel index, with three-year and five-year moving averages**

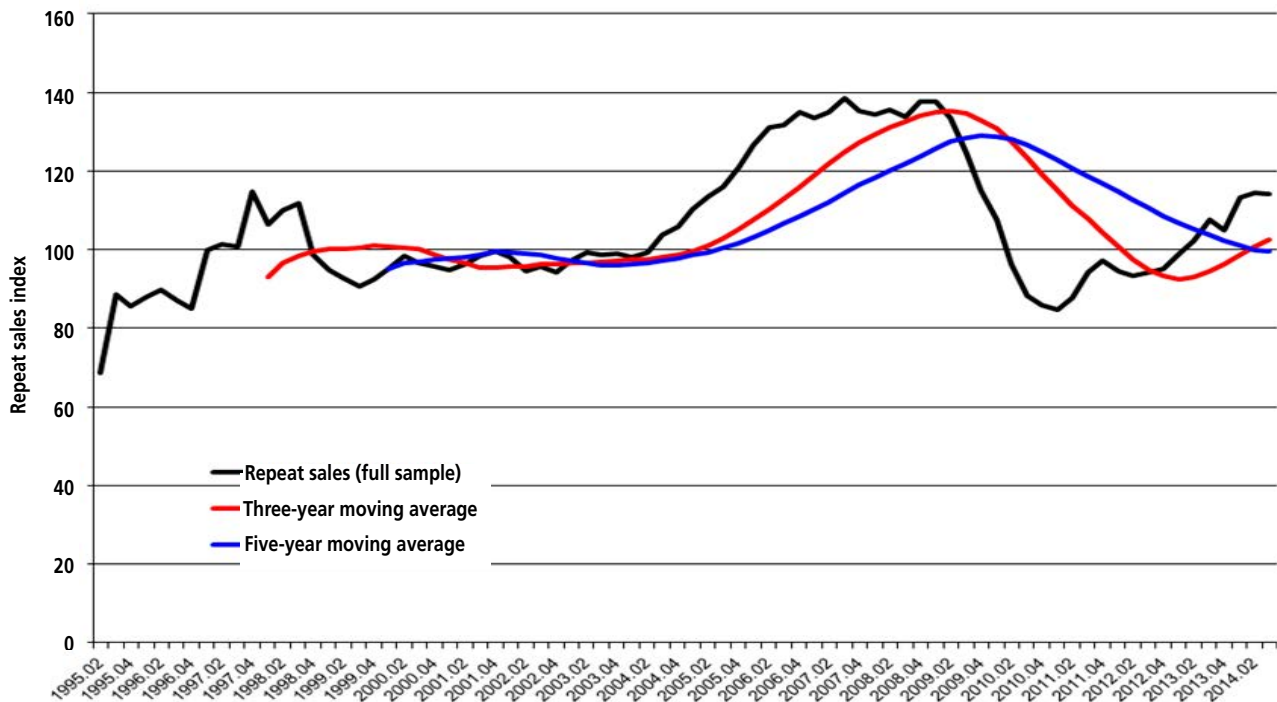
Sources: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics

**Prices of Large and Small Hotels Continue to Move Sideways, with Downward Pressure Indicated on a Year-over-Year Basis**

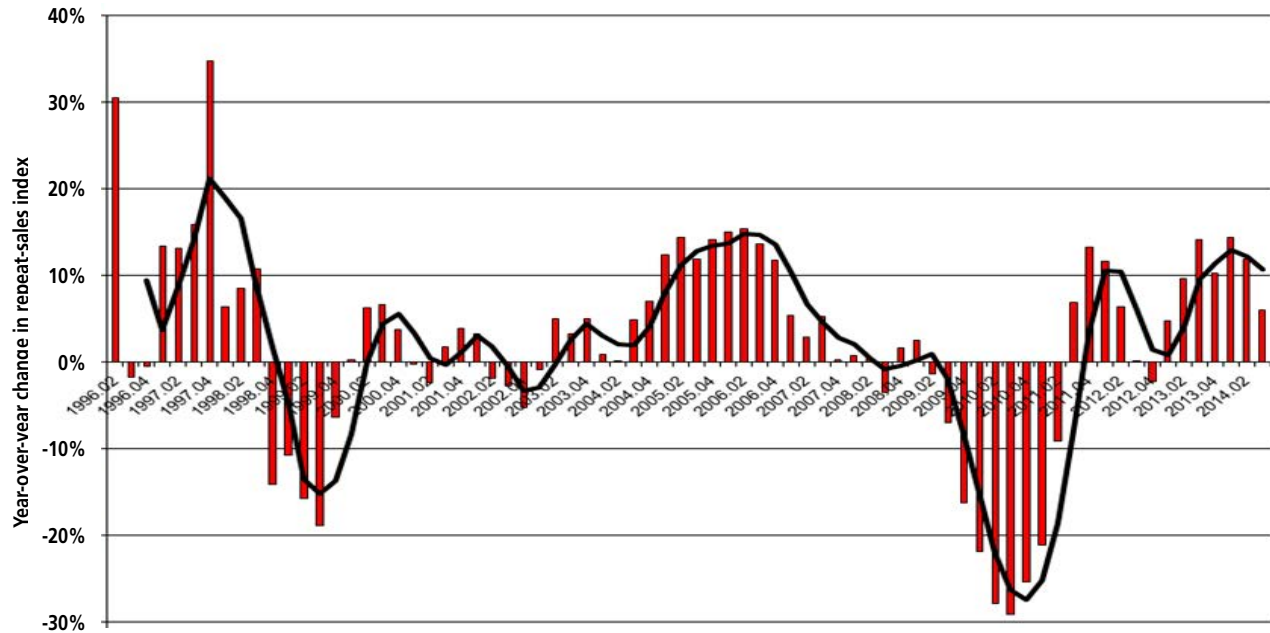
Exhibit 6 shows that prices for the large-hotel and small-hotel indices continue to remain more or less flat in general. However, Exhibit 7 shows that the large hotel index has approximately converged to its three-year moving average, signaling a “hold.” Exhibit 8 provides further confirmation that the large-hotel index has slowed on a year-over-year basis and in fact has started to decline. Exhibit 9 shows that the current price for smaller hotels also appears to be converging towards its three-year moving average. As in the case of larger hotels, Exhibit 10 reveals that year-over-year growth in the price of small hotels has started to decline as well.

**EXHIBIT 10****Year-over-year change in small-hotel index, with moving-average trendline**

Sources: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics

**EXHIBIT 11****Hotel repeat-sale index (full sample), three-year moving average, and five-year moving average**

Sources: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics

**EXHIBIT 12****Year-over-year change in repeat-sale index, with moving-average trendline**

Sources: Cornell Center for Real Estate and Finance, CoStar, Real Capital Analytics

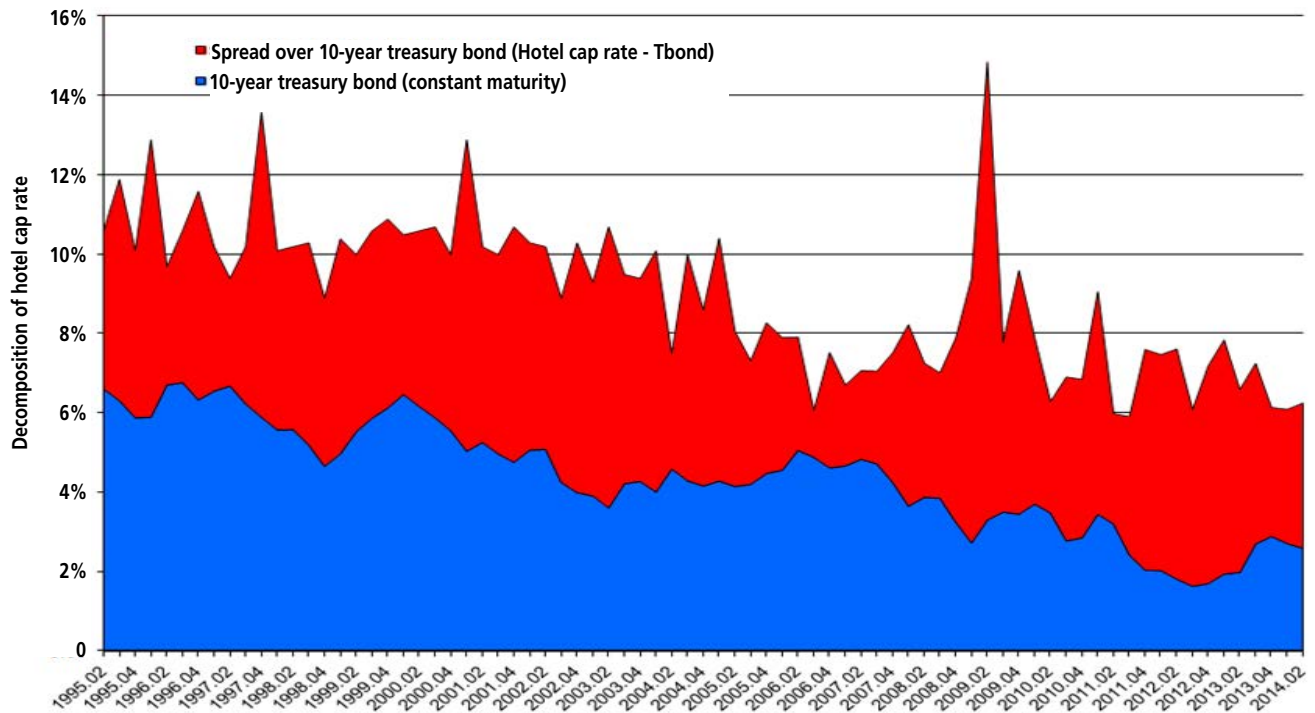
### **Repeat Sales Tell a Similar Story in Terms of Flattening Price Movement, with Declining Year-over-Year Price Momentum**

The price movement of repeat hotel sales in Exhibit 11 tells a similar story to the price movement of large and small hotels using hedonic indices with prices continuing to move sideways.<sup>2</sup> The current repeat sale index of 114.237 (full sample, for 2014Q3) is slightly below (-.2%) the previous quarter's (2014Q2) index of 114.417 (although the difference is indistinguishable). However, the repeat hotel sale index rose 6 percent on a year-over-year basis (2014Q3 to 2013Q3). Exhibit 12 provides an alternative perspective of the price momentum in the repeat sales. Similar to large and small hotels, the index is now decreasing on a year-over-year basis. Price growth based on repeat sales is moderating (flattening) at best, with downward price momentum evident on a year-over-year basis.

<sup>2</sup> As explained in previous publications, we report two repeat sale indices. The repeat sale full sample index uses all repeat sale pairs whereas the repeat sale index with a base of 100 at 2000Q1 uses only those sales that occurred on or after the first quarter of 2000. As such, if a hotel sold in 1995 and then sold again in 2012, it would be included in the first repeat sale index, that is, the repeat sale full sample index but it would not be included in the post-2000 repeat sale index.

# EXHIBIT 13

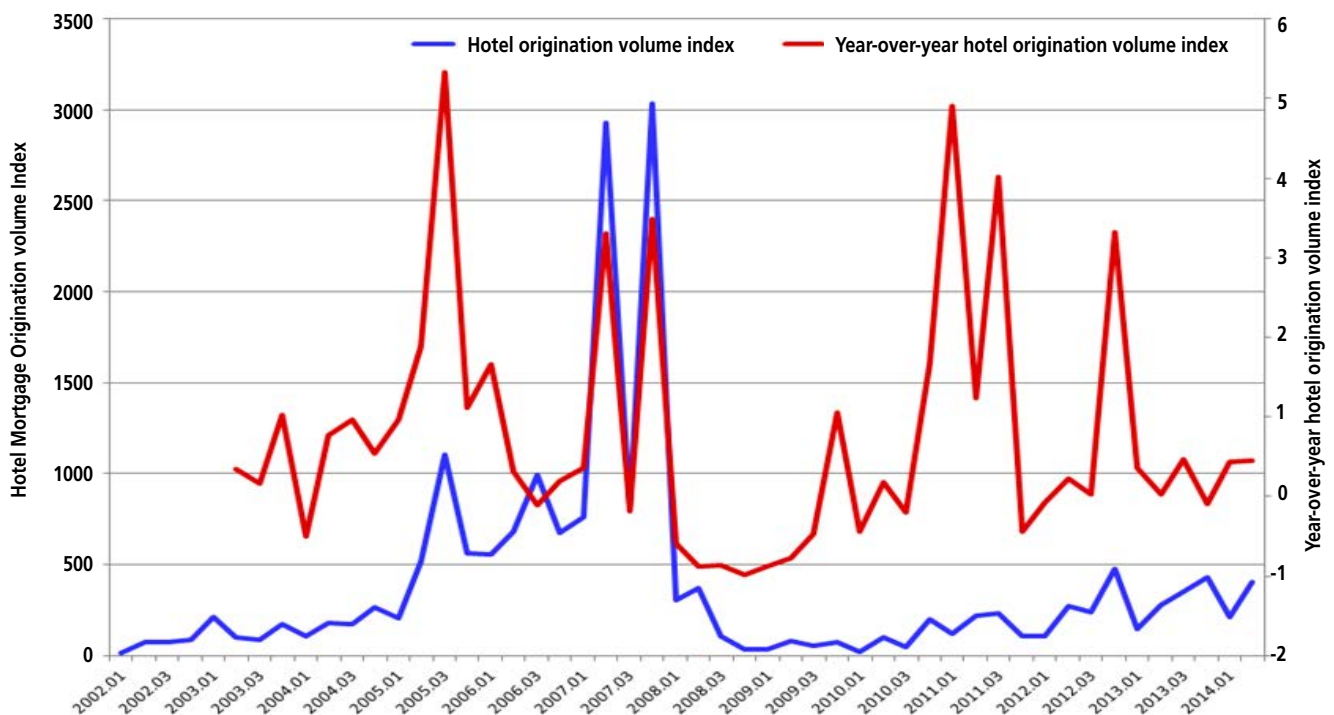
## Decomposition of ACLI hotel capitalization rates into risk premium and risk-free rate



Sources: ACLI, Cornell Center for Real Estate and Finance

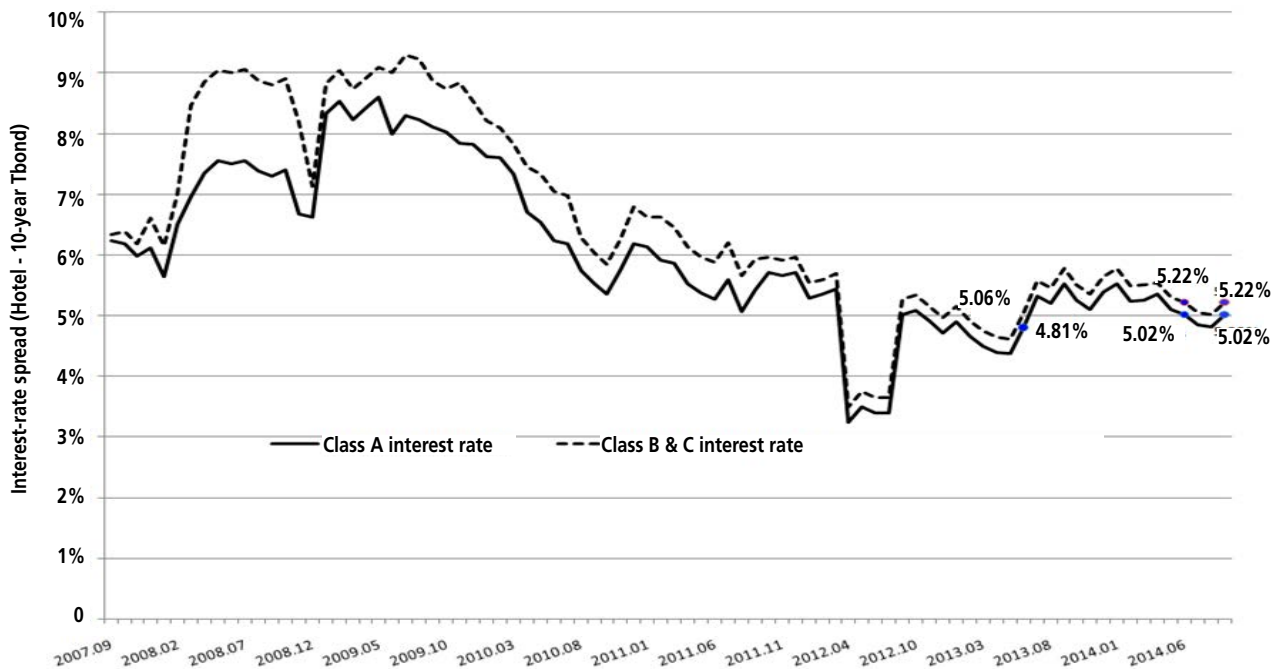
# EXHIBIT 14

## Mortgage origination volume for hotels



Sources: Cornell Center for Real Estate and Finance, Mortgage Bankers Association



**EXHIBIT 15****Interest rates on Class A hotels versus Class B & C properties**

Sources: Cushman Wakefield Sonnenblick Goldman

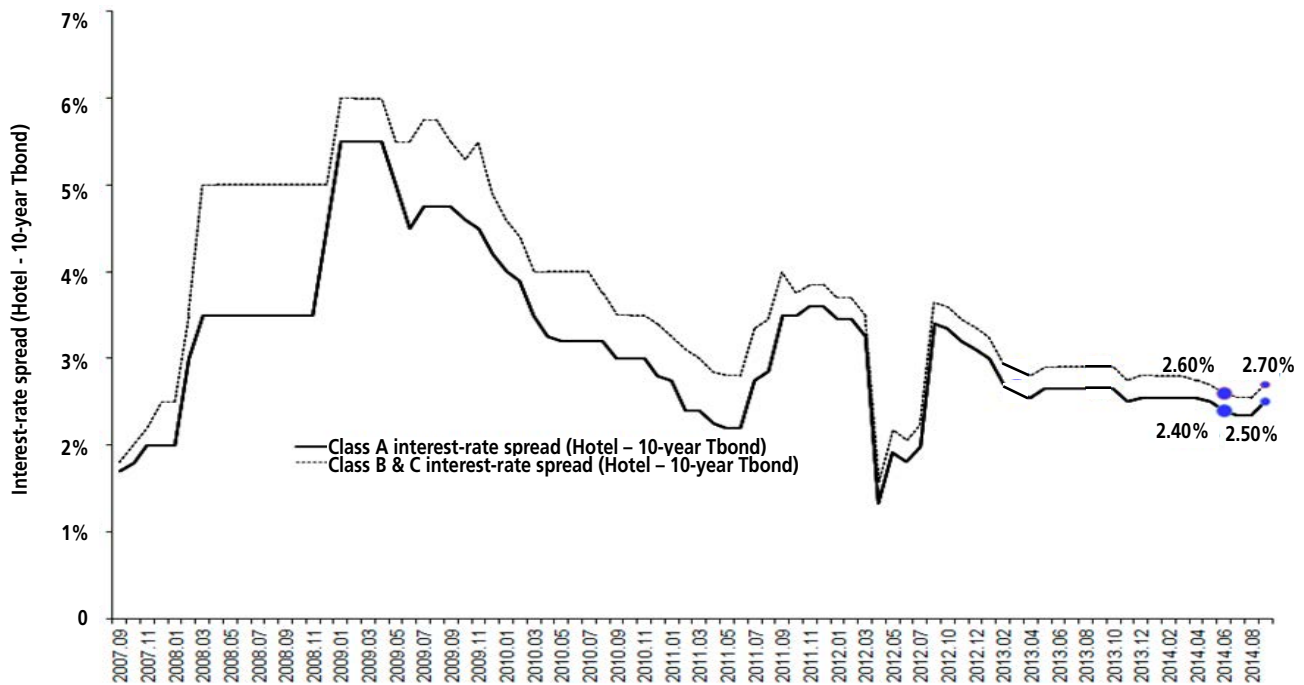
**Cap Rates Are Rising**

For the second quarter of 2014, the latest quarter for which ACLI reports data on hotel cap rates, cap rates have risen slightly, from 6.095 percent in 2014Q1 to 6.26 percent in 2014Q2. Exhibit 13 shows that although the rate on the 10-year Treasury bond (constant maturity) declined from 2.72 percent to 2.6 percent, the hotel cap rate spread over the 10-year treasury continued to increase, from 3.38 percent to 3.66 percent. In the second quarter, the hotel cap rate spread over the 10-year treasury increased from 3.24 percent to 3.38 percent. Based on those numbers it appears that hotel investors are demanding increased compensation for greater perceived risk.

**Mortgage Financing Volume Has Remained Relatively Stable on a Year-over-Year Basis**

Exhibit 14 shows that the mortgage origination volume for hotels as reported for 2014Q2 is 45.4-percent greater than the previous year (2013Q2). This compares to a 43.2 percent year-over-year increase (2013Q1 relative to 2012Q1) for the first quarter.

## Interest-rate spreads of hotels versus U.S. Treasury ten-year bonds



Sources: Cushman Wakefield Sonnenblick Goldman

### Cost of Debt Financing Has Remained Relatively Flat, although the Relative Risk Premium for Hotels Continues to Increase

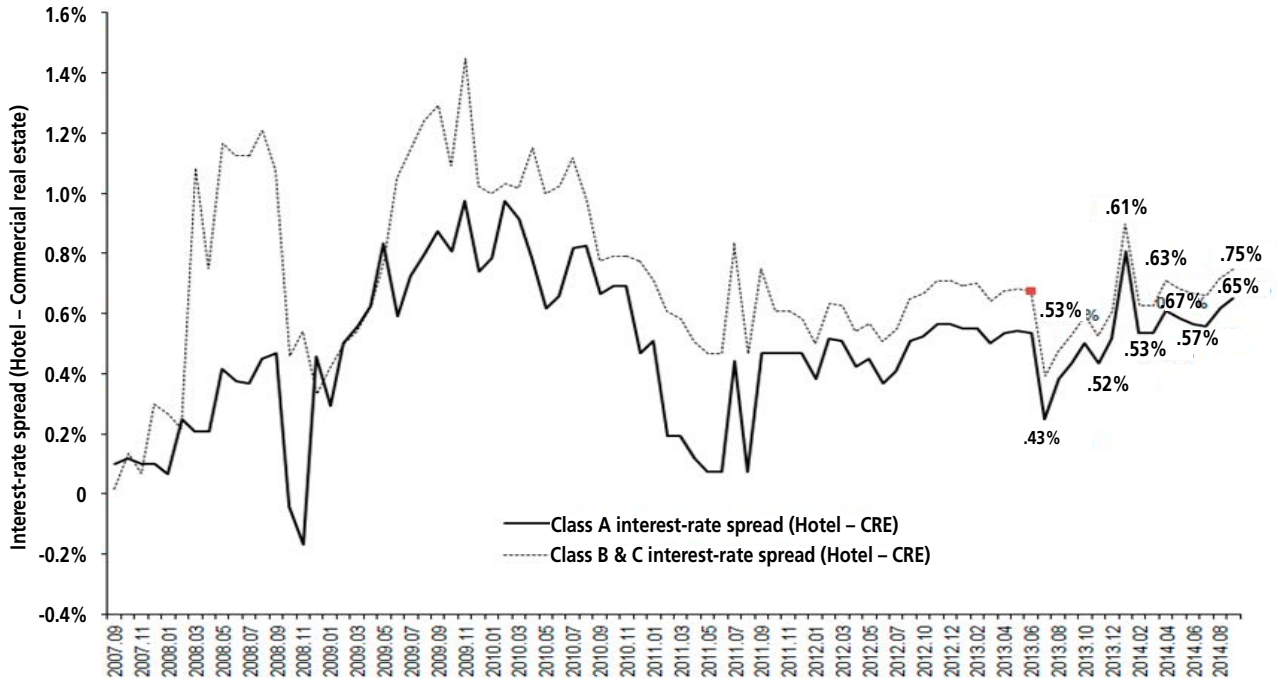
The cost of obtaining hotel financing has continued to remain relatively constant since July 2013 (see Exhibit 15), when the interest rate was at 4.81 percent for Class A Hotels, and 5.06 percent for B&C properties. As of September 2014, the interest rate on Class A hotels is 5.02 percent, and for Class B&C hotels 5.22 percent. These rates remained unchanged from those reported in June 2014. Exhibit 16 and Exhibit 17 depict interest rate spreads relative to different benchmarks. Exhibit 16 shows the spread between Class A and Class B&C interest rates on full-service hotels over the ten-year Treasury bond. On this metric, interest rate spreads have risen indicating that the lenders are demanding additional compensation for risk associated with lending on hotels. Exhibit 17 shows the spread between the interest rate on Class A and on class B&C full-service hotels over

the interest rate corresponding to non-hotel commercial real estate (the hotel real estate premium).<sup>3</sup> The hotel real estate premiums for both higher quality (.65%) and lower quality (.75%) hotels have continued to increase relative to the previous two quarters (.57% for high quality, and .67% for lower quality for 2014Q2; and .53% for high quality and .63% for lower quality for 2014Q1). The continued increase in the premium in Exhibit 17 is a signal that the perceived default risk for hotel properties continues to rise relative other commercial real estate. The reason why we have not seen an increase in the cost of borrowing debt even though the relative risk premium for hotels has been increasing is because of the decline in the 10-year treasury rate.

<sup>3</sup> The interest rate on hotel properties is generally higher than that for apartment, industrial, office, and retail properties, in part because hotels' cash flow is commonly more volatile than that of other commercial properties.

# EXHIBIT 17

## Interest-rate spreads of hotels versus non-hotel commercial real estate



Source: Cushman Wakefield Sonnenblick Goldman

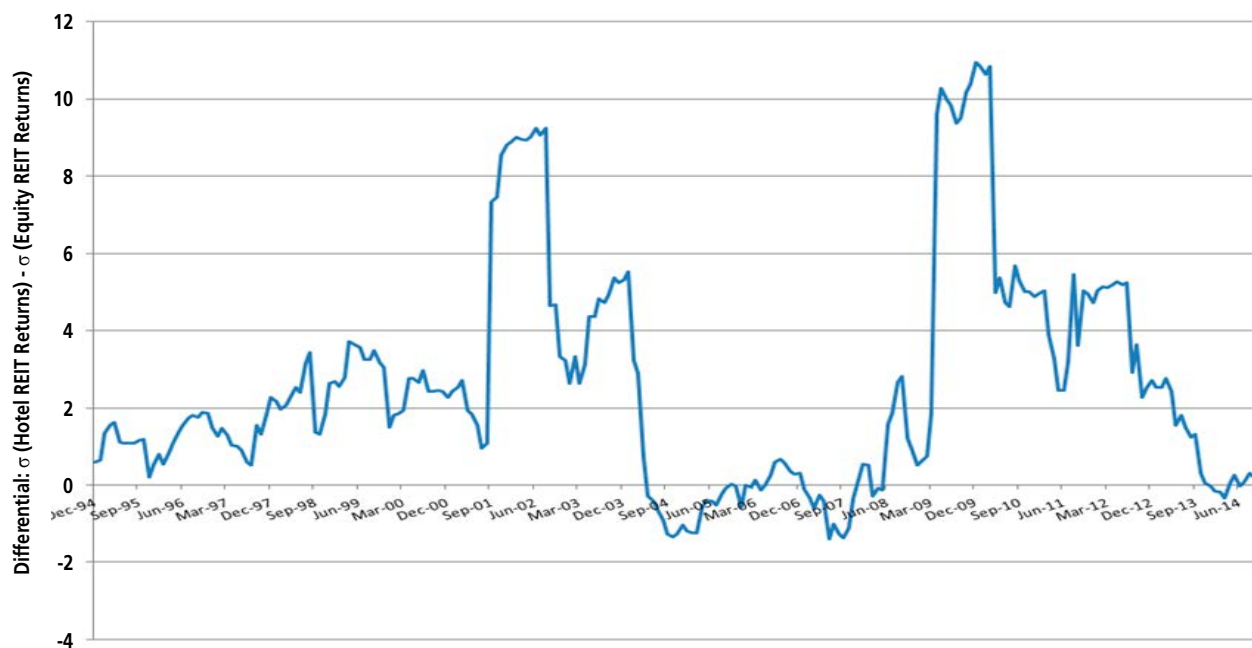
# EXHIBIT 18

## Cost of equity financing using the Capital Asset Pricing Model and hotel REITs



Source: Cornell Center for Real Estate and Finance, NAREIT

## Risk differential between hotel REITs and equity REITs



Source: Cornell Center for Real Estate and Finance, NAREIT

### Cost of Equity Financing Has Diminished

The cost of using equity financing for hotels continues to shrink, as measured using the Capital Asset Pricing Model (CAPM) on Hotel REIT returns (shown in Exhibit 18). The cost of using equity funds stood at 11.5 percent for 2014Q2, down from 14.3 percent in the first quarter (2014Q1) and down from 13.1 percent in the second quarter of 2013 (2013Q2). This lower cost is due to a reduction in the systematic risk (beta) of hotel REITs. In terms of total risk (systematic risk + risk that is unique to hotel REITs), Exhibit 19 depicts that the total risk of Hotel REITs is similar to the total risk of equity REITs in general.<sup>4</sup> As the total risk of Hotel REITs increases relative to the total risk for equity REITs, expect to see interest rates on hotel financing rise relative to other property types due to the increased likelihood of hotel defaults.<sup>5</sup>

<sup>4</sup> We calculate the total risk for hotel REITs using a 12 month rolling window of monthly return on hotel REITs.

<sup>5</sup> Please refer to: Crocker H. Liu, Jan A. deRoos, and Andrey D. Ukhov, "A New Canary for Hotel Mortgage Market Distress," Cornell Hospitality Report, forthcoming.

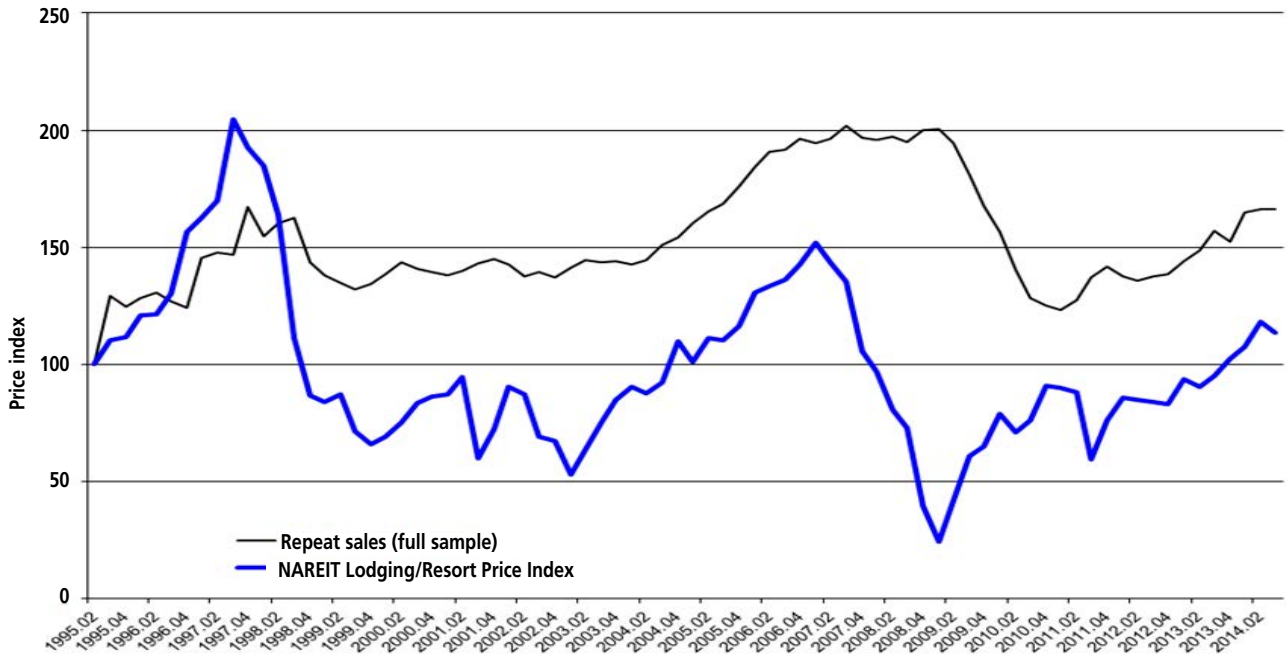
### Expect a Decline in the Price of Both Large and Small Hotels, According to the Tea Leaves

Exhibit 20 compares the performance of the repeat sales index relative to the NAREIT Lodging/Resort Price Index. The repeat sales index tends to lag the NAREIT index by at least one quarter or more. This is consistent with prior academic studies which find that securitized real estate is leading indicator of underlying real estate performance since the stock market is forward looking or efficient. Looking ahead, the NAREIT lodging index has lost its forward momentum, declining 3.7 percent this quarter after several quarters of positive gains (2013Q2-2014Q2). The architecture billings index (ABI) for commercial and industrial property, which represents another forward-looking metric also declined, losing 6 percent this quarter (2014Q3) compared to an 8-percent gain in the previous quarter, as shown in Exhibit 21.<sup>6</sup> In contrast to these indicators, the National Association

<sup>6</sup> We used the May ABI index as reported on June 19, 2014, since the June ABI index will be reported after the writing of this report. The ABI anticipates non-residential construction activity by approximately 9 to 12 months. According to material posted on their website, "The indexes are developed from the monthly Work-on-the-Boards survey panel where

## EXHIBIT 20

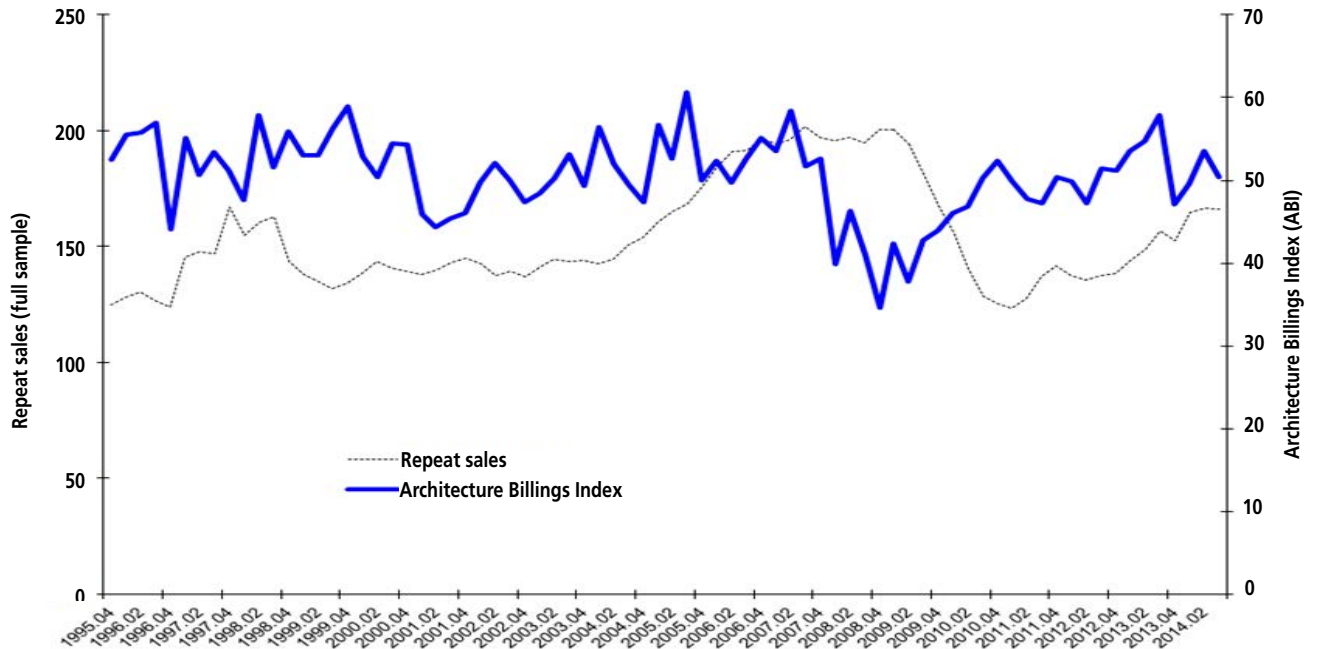
### Hotel repeat sales index versus NAREIT lodging/resort price index



Source: Cornell Center for Real Estate and Finance, NAREIT

## EXHIBIT 21

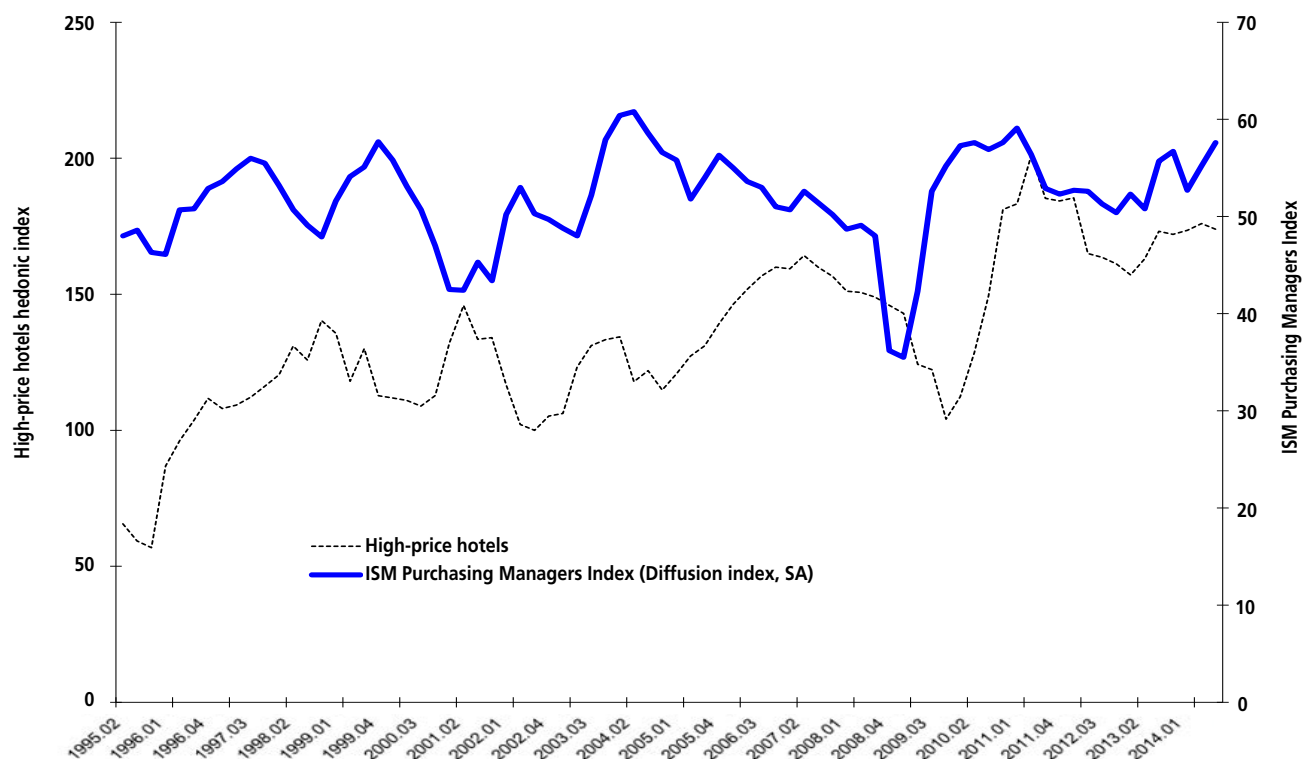
### Hotel repeat sales index versus architecture billings index



Sources: Cornell Center for Real Estate and Finance, American Institute of Architects



## Business confidence index (National Association of Purchasing Managers) and high-price hotel index



Sources: Cornell Center for Real Estate and Finance, Institute for Supply Management (ISM)

of Purchasing Managers (NAPM) index, which is an indicator of anticipated business confidence and thus business traveler demand continued to gain ground, rising 4 percent this quarter after a 4.7-percent gain in the previous quarter (see Exhibit 22).<sup>7</sup> The absolute level of the index has contin-

participants are asked whether their billings increased, decreased, or stayed the same in the month that just ended. According to the proportion of respondents choosing each option, a score is generated, which represents an index value for each month..." See: [www.aiaa.org/practicing/economics/aiaas076265](http://www.aiaa.org/practicing/economics/aiaas076265).

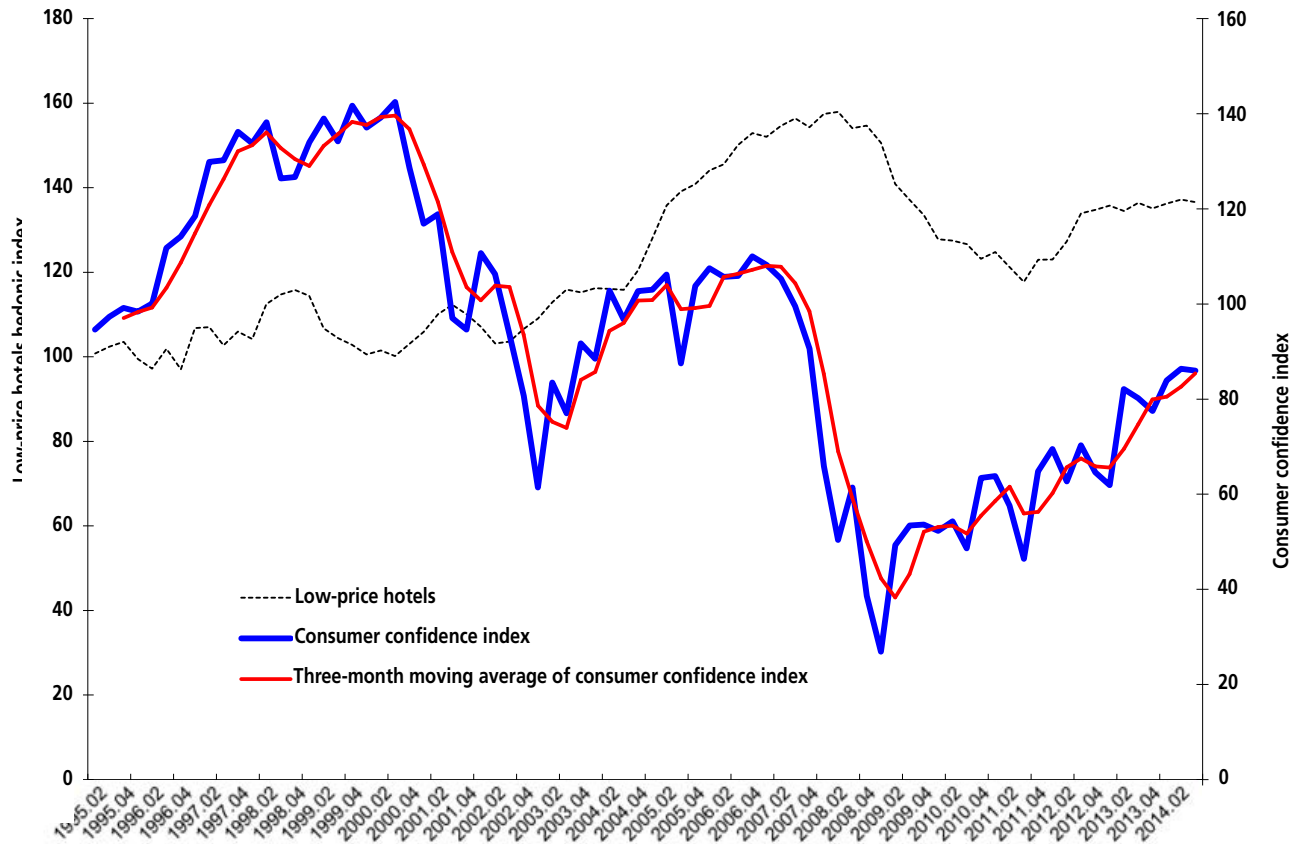
<sup>7</sup> The ISM: Purchasing Managers' Index (Diffusion Index, SA), also known as the National Association of Purchasing Managers (NAPM) index, is based on a survey of over 250 companies within twenty-one industries covering all 50 states. It not only measures the health of the manufacturing sector but is a proxy for the overall economy. It is

ued to stay above 50 (57.6, in the third quarter of 2014) since 2009Q3, indicating that the manufacturing sector continues to gain strength.

The Consumer Confidence Index from the Conference Board, shown in Exhibit 23, which we use as a proxy for anticipated consumer demand for leisure travel and a leading indicator of the hedonic index for low priced hotels, fell slightly in September (blue line) to 86, a .46-percent decline on a quarter-over-quarter basis, consistent with our other forward-looking indicators. ■

calculated by surveying purchasing managers for data about new orders, production, employment, deliveries, and inventory, in descending order of importance. A reading over 50 percent indicates that manufacturing is growing, while a reading below 50 percent means it is shrinking.

## Consumer confidence index and low-price hotel index



Sources: Cornell Center for Real Estate and Finance, Conference Board

### Hotel Valuation Model (HOTVAL) Has Been Updated

We have updated our hotel valuation regression model to include the transaction data used to generate this report. We provide this user friendly hotel valuation model in an Excel spreadsheet entitled "HOTVAL Toolkit" as a complement to this report which is available for download from our [CREF website](#).



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